DRAFT - this GAAMP is under review.

In the event of an agricultural pollution emergency such as a chemical/fertilizer spill, manure lagoon breach, etc., the Michigan Department of Agriculture and/or the Michigan Department of Environmental Quality should be contacted at the following emergency telephone numbers:

Michigan Department of Agriculture: (800) 405-0101
Michigan Department of Environmental Quality: (800) 292-4706

If there is not an emergency, but you have questions on the Michigan Right to Farm Act or items concerning a farm operation, please contact the:

Michigan Department of Agriculture
Right to Farm Program
P.O. Box 30017
Lansing, Michigan 48909
(517) 373-9797
(517) 335-3329 FAX
(877) 632-1783

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TABLE OF CONTENTS

PREFACE

The Michigan legislature passed into law the Michigan Right to Farm Act (Act 93 of 1981) which requires the establishment of Generally Accepted Agricultural and Management Practices (GAAMPs). The Generally Accepted Agricultural and Management Practices (GAAMPs) for Site Selection and Odor Control for New and Expanding Livestock Facilities are written to fulfill that purpose and to provide uniform, statewide standards and acceptable management practices based on sound science. These practices can serve producers in the various sectors of the industry to compare or improve their own managerial routines. New scientific discoveries and changing economic conditions may require necessary revision of ~~the Practices~~ these GAAMPs.

The Generally Accepted Agricultural and Management Practices that have been developed are the following:

1) 1988 Manure Management and Utilization
2) 1991 Pesticide Utilization and Pest Control
3) 1993 Nutrient Utilization
4) 1995 Care of Farm Animals
5) 1996 Cranberry Production
6) 2000 Site Selection and Odor Control for New and Expanding Livestock Production Facilities
7) 2003 Irrigation Water Use

These practices were developed with industry, university and multi-governmental agency input. As agricultural operations continue to change, new practices may be developed to address the concerns of the neighboring community. Agricultural producers who voluntarily follow these practices are provided protection from public or private nuisance litigation under the Right to Farm Act.

The website for the GAAMPs is at http://www.michigan.gov/mda Click “Farming”, “Environment”, and then click “GAAMPs” to access.

~~GENERALLY ACCEPTED AGRICULTURAL AND MANAGEMENT PRACTICES FOR SITE SELECTION AND ODOR CONTROL FOR NEW AND EXPANDING LIVESTOCK PRODUCTION FACILITIES~~

SECTION I. - INTRODUCTION

Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Production Facilities will help determine the suitability of sites for livestock production facilities. These GAAMPs provide a planning process that can be used to properly plan new and expanding facilities to increase the suitability of a particular site and enhance neighbor relations.

These Generally Accepted Agricultural and Management Practices (GAAMPs) for Site Selection and Odor Control for New and Expanding Livestock Facilities are written to ~~fulfill that purpose and to~~ provide uniform, statewide standards and acceptable management practices based on sound science.

FARM PLANNING AND SITE DEVELOPMENT

The GAAMPs for site selection and odor control for new and expanding livestock production facilities are intended to fulfill three primary objectives:

1) Environmental Protection
2) Social Considerations (neighbor relations)
3) Economic Viability

When all three of these objectives are met, the ability of a farm operation to achieve agricultural sustainability is greatly increased.

Farm planning involves three broad phases: Collection and analysis (understanding the problems and opportunities); decision making; and implementation. Collection and analysis includes: determining objectives, inventorying resources and analyzing data. Decision support includes formulating alternatives, evaluating alternatives and making decisions. The final step is implementation.

Producers should utilize recognized industry and university professionals in the evaluation of the economic viability and sustainability of constructing new or expanding existing livestock production facilities. This evaluation should be comprehensive enough to consider all aspects of livestock production including economics, resources, operation, waste management and longevity.

The decision of where to site a livestock production facility can be based on several objectives including: preserving water quality, minimizing odor, working with existing land ownership constraints, future land development patterns, maximizing convenience for the

operator, maintaining esthetic character, minimizing conflicts with adjacent land uses and complying with other applicable local ordinances. The environmental objectives of these GAAMPs focus specifically on water quality protection and odor control, and how environmental and management factors affect the suitability of sites for livestock production. The suitability of a particular site for a livestock production facility depends upon a number of factors, such as the number of animal units (size), the species of animals, wind directions, land base for use, topography of the surrounding land, adjacent land uses, the availability of Class A roads for feed and product movement, soil types, hydrology and many others.

Site selection is a complex process, and each site should be assessed individually in terms of its proposed use. These GAAMPs are written in recognition of the importance of site-specificity in siting decisions. While general guidelines apply to all siting decisions, specific criteria are not equally applicable to all types of operations and all locations. In addition to the guidelines provided in these GAAMPs, the United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) technical references, including the Agricultural Waste Management Field Handbook (AWMFH) and the Field Office Technical Guide (FOTG), are excellent sources for information and standards related to the siting of livestock production facilities.

It is recognized that there is potential risk for surface or groundwater pollution, or conflict over excessive odors from a livestock production facility. However, the appropriate use of technologies and management practices can minimize these risks, thus allowing the livestock production facility to operate with minimal potential for excessive odor or environmental degradation. These measures should be incorporated into a Site Plan and a Manure Management System Plan, both as defined in Section IV, which are required for all new and expanding livestock production facilities.

Groundwater and surface water quality issues regarding animal agriculture production are currently addressed in the Generally Accepted Agricultural and Management Practices for Manure Management and Utilization and are not duplicated here. The GAAMPs for Manure Management and Utilization cover runoff control and wastewater management, construction design and management for manure storage and treatment facilities, and manure application to land. In addition, the GAAMPs for Manure Management and Utilization stress the importance of each livestock production facility developing a manure management system plan that focuses on management of manure nutrients and management of manure and odors. ~~These issues are currently covered in the GAAMPs for Manure Management and Utilization and are not duplicated here~~.

These GAAMPs are referenced in Michigan's Natural Resources and Environmental Protection Act (NREPA), PA451 of 1994, as amended. NREPA protects the waters of the state from the release of pollutants in quantities and/or concentrations that violate established water quality standards. In addition, the GAAMPs utilize the nationally recognized construction and management standard to provide runoff control for a 25 year, 24 hour rainfall event. Air quality issues related to production agriculture are addressed in Section IV of these GAAMPs.

~~TECHNOLOGIES~~

~~Odor control is a primary focus relating to the social consideration objectives of these GAAMPs. Odor perception is a subjective response to what people detect through their sense of smell in the air they breathe and poses unique management challenges for livestock producers. While there is no scientific evidence that odorous gases that escape from livestock production facilities are toxic at the concentrations in the atmosphere experienced by neighbors, they can become an annoyance or a nuisance if manure is mismanaged or livestock production facilities are improperly sited.~~

~~Recent experiences with the National Pork Producers Council On-Farm Odor Assessment Program suggest that significant odor reduction can be achieved by improving the management of certain livestock production facilities. Improved management as well as the adoption of new technologies to control odor offer a means for reducing odor from livestock production facilities and manure storage facilities, thus broadening the area within which livestock production facilities may be appropriately sited.~~

~~Odor reduction technologies include, but are not limited to, vent biofilters, manure storage covers and composting. Each technology presents different challenges and opportunities. These should be considered during the planning process for a new or expanding animal livestock facility. Management activities for odor control are outlined in the GAAMPs for Manure Management and Utilization. An Assessment of the potential for odor generation from a livestock production facility includes using the results of the Minnesota Odor Estimator Model and identifying the technologies and management practices to be implemented to adequately control odors. Some operations exceeding 1000 animal units may need to implement further odor reduction special technologies and/or management practices.~~

~~The goal for effective odor management is to reduce the frequency, intensity, duration and offensiveness of odors that neighbors might experience. Because of the subjective nature of human responses to certain odors, recommending appropriate technology and management practices is not an exact science. Since site selection for livestock production facilities is an important factor in managing, and therefore, minimizing potential for odor impacts upon neighbors, site selection for new and expanding residential housing should consider setbacks to avoid potential land use conflicts.~~

~~Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Production Facilities will help determine the suitability of sites for livestock production facilities. These GAAMPs provide a planning process that can be used to properly plan new and expanding facilities to increase the suitability of a particular site and enhance neighbor relations.~~

SECTION II. - DEFINITIONS

AS USED IN THESE GAAMPs:

Animal Units - Animal units are defined as listed in the U.S. Code of Federal Regulations (CFR) 40 Section 122, Appendix A (See Table 1).

Distances between a Livestock Production Facility and Non-Farm Residences - The distance from a livestock production facility and a residence is measured from the nearest point of the livestock production facility to the nearest point of the residence.

Expanding Livestock Production Facility – an addition to a facility to increase the holding capacity where animals will be confined ~~and/or a new or expanded manure storage structure that is/are built~~ at a site that presently has livestock production facilities contiguous to the construction site. A new or expanded manure storage structure built to accommodate an expansion in animal units within three years from construction of the manure storage will also be considered an expanding livestock production facility.

Livestock Farm Residence - a residence on land owned/rented by the livestock farm operation and those residences on farms affiliated by contract or agreement with the livestock production facility.

Livestock Production Facilities - includes all facilities where farm animals as defined in the Right to Farm Act are confined with a capacity of 50 animal units or greater and/or the associated manure storage facilities. Pasture systems are excluded.

New Livestock Production Facilities - all facilities where animals will be confined and/or manure storage structures that are built at new sites and are not part of another livestock production facility, including a site that is expanding greater than 100% of existing production within any 3 year time period and the resulting number of animal units will exceed 749.

Non-Farm Residence - a residence that is habitable for human occupation and is not affiliated with the specific livestock production system.

Pasture Systems - Pasture land is land that is primarily used for the production of forage upon which livestock graze. Pasture land is characterized by a pre-dominance of vegetation consisting of desirable forage. Sites such as loafing areas, confinement areas, or feedlots, which have livestock densities, that preclude a predominance of desirable forage species, are not considered pasture land.

Property Line Setback - is the distance from the livestock production facility to the property line measured from the facility to the nearest point of the facility owner's property line. If a producer owns land across a road, the road or right of way does not constitute a property line. Local road/property line setbacks do apply.

Table 1. Animal Unit Equivalents

Animal Units	50	250	500	750	1,000
Animal Type[1]	**Number of Animals**				
Slaughter and Feeder Cattle	50	250	500	750	1,000
Mature Dairy Cattle	35	175	350	525	700
Swine[2]	125	625	1,250	1,875	2,500
Sheep and Lambs	500	2,500	5,000	7,500	10,000
Horses	25	125	250	375	500
Turkeys	2,750	13,750	27,500	41,250	55,000
Laying Hens or Broilers	5,000	25,000	50,000	75,000	100,000

[1]All other animal classes, types or sizes (eg. Nursery pigs) not in this table, but defined in the Michigan Right to Farm Act or described in Michigan Commission of Agriculture Policy, are to be calculated as one thousand pounds live weight equals one animal unit.
[2] Weighing over 55 pounds.

SECTION III. - DETERMINING ACCEPTABLE LOCATIONS FOR LIVESTOCK PRODUCTION FACILITIES

All potential sites for new and expanding livestock production facilities can be identified by three general categories. These are:

Category 1. These are sites normally acceptable for livestock production facilities and generally defined as areas that are highly agricultural with few non-farm residences.

Category 2. These are sites where special technologies and/or management practices could be needed to make new and expanding livestock production facilities acceptable. These areas are predominantly agricultural but also have an increased number of non-farm residents.

Category 3. These are sites that are not acceptable for new and expanding livestock production facilities due to environmental concerns or areas that may be predominantly residential.

Category 1 Sites: Sites normally acceptable for livestock production facilities.

Category 1 sites are those sites which have been traditionally used for agricultural purposes and are in an area with a relatively low residential housing density. These sites are located where there are five or fewer non-farm residences within ¼ mile from a new

livestock production facility with up to 749 animal units, and within ½ mile from a new livestock production facility with 750 animal units or greater. New and expanding livestock production facilities should only be constructed in areas where local zoning allows for agriculture uses.

If the proposed site is within Category 1, it is recognized that this is a site normally acceptable for livestock production facilities. As shown in Table 2, if the proposed site is within Category 1 and has a capacity of 50 to 499 animal units, MDA will review and verify the producer's plans at the producer's request. If the proposed site is within Category 1 and has a capacity of 500 or more animal units, the producer must follow the MDA site selection review and verification process as described in Section V. Category 1 sites with less than 1000 animal units which are able to meet the property line setbacks as listed in Tables 2 and 3, as appropriate, and which meet the other requirements of these GAAMPs, are generally considered as acceptable for Site Selection Verification. An Odor Management Plan (OMP) will not be required for these sites in most circumstances. It is however, recommended that all producers develop and implement an OMP in order to reduce odor concerns for neighboring non-farm residents.

A request to reduce the property line setbacks, as listed in Tables 2 and 3, will require the development of an OMP for verification. All verification requests for Category 1 sites with 1000 animal units or greater will require the development and implementation of an OMP.

Table 2. Category 1 Site Setbacks, Verification and Notification – New Operations

Total Animal Unit	New Operations Non-Farm Residences within Distance	Property Line Setback[1]	MDA Site Review and Verification Process	~~Local Unit of Government Notification2~~
50-~~4~~99	0-5 within ¼ mile	250 ft	Upon Producer Request[~~3~~2]	~~Yes~~
500-749	0-5 within ¼ mile	400 ft	Yes	~~Yes~~
750-999	0-5 within ½ mile	400 ft	Yes	~~Yes~~
1000 or more	0-5 within ½ mile	600 ft	Yes	~~Yes~~

[1]May be ~~modified upon written request based upon the Minnesota Odor Estimator Model utilizing the 95% odor annoyance free requirement, proximity to existing non-farm residences, adjacent land use and management technologies implemented at the livestock production facility.~~ reduced based upon the Odor Management Plan.
[2]~~See Section V: Notification of Local Unit of Government~~.
[~~3~~] To be afforded nuisance protection under the Right to Farm Act, producers must conform to all requirements of the GAAMPs but are not required to complete the site review and verification process if less than 500 animal units.

Table 3. Category 1 Site Setbacks, Verification and Notification – Expanding Operations

Total Animal Unit	Expanding Operations Non-Farm Residences within Distance	Property Line Setback[1]	MDA Site Review and Verification Process	~~Local Unit of Government Notification~~[2]
50-249	0-7 within ¼ mile	125 ft	Upon Producer Request~~[3]~~[2]	~~Yes~~
250-499	0-7 within ¼ mile	200	Upon Producer Request~~[3]~~[2]	~~Yes~~
500-749	0-7 with ¼ mile	200 ft	Yes	~~Yes~~
750-999	0-7 with ½ mile	200 ft	Yes	~~Yes~~
1000 or more	0-7 within ½ mile	300ft	Yes	~~Yes~~

[1]May be ~~modified upon written request based upon the Minnesota Odor Estimator Model utilizing the 95% odor annoyance free requirement, proximity to existing non-farm residences, adjacent land use and management technologies implemented at the livestock production facility.~~ reduced based upon the Odor Management Plan.
[2]~~See Section V: Notification of Local Unit of Government~~.
[3]To be afforded nuisance protection under these GAAMPs producers must conform to all requirements of the GAAMPs but are not required to complete the site review and verification process if less than 500 animal units.

Category 2 Sites: Sites where special technologies and/or management practices may be needed to make new and expanding livestock production facilities acceptable.

Category 2 sites are those where site-specific factors may limit the environmental, social or economic acceptability of the site for livestock production facilities and where structural, vegetative, technological and management measures may be necessary to address those limiting factors. These measures should be incorporated into a Site Plan and a Manure Management System Plan, both as defined in Section IV, which are required for all new and expanding livestock production facilities seeking verification. New and expanding livestock production facilities should only be constructed in areas where local zoning allows for agriculture uses. Due to the increased density of non-farm residences in Category 2 sites, an OMP is required for all proposed new and expanding livestock production facilities.

Tables 4 and 5 show how Category 2 sites are defined and lists setbacks, verification and notification requirements. As an example, a proposed site for an expanding livestock production facility (Table 5) with 500 animal units and between eight and 20 residences within ¼ mile of the facility, would have a setback of 200 feet from the owner's property line, and would be required to have a site verification request approved by MDA.

Table 4. Category 2 Site Setbacks, Verification and Notification – New Operations

Total Animal Units	For new Operations Non-Farm Residences Within Distance	Property Line Setback[1]	MDA Site Review and Verification Process	~~Local Unit of Government Notification[2]~~
50-249	6-13 within 1/4 mile	250 ft	Upon Producer Request[3,2]	~~Yes~~
250-499	6-13 within 1/4 mile	300 ft	Yes	~~Yes~~
500-749	6-13 within 1/4 mile	400 ft	Yes	~~Yes~~
750-999	6-13 within 1/2 mile	500 ft	Yes	~~Yes~~
1000 or more	6-13 within 1/2 mile	600 ft	Yes	~~Yes~~

[1] May be ~~modified upon written request based upon the Minnesota Odor Estimator Model, utilizing the 95% odor annoyance free requirement, proximity to existing non-farm residences, adjacent land use and management technologies implemented at the livestock production facility.~~ reduced based upon the Odor Management Plan.

[2] ~~See Section V: Notification of Local Unit of Government.~~

[3] To be afforded nuisance protection under the Right to Farm Act, producers must conform to all applicable GAAMPs but are not required to complete the site review and verification process if less than 250 animal units.

Table 5. Category 2 Site Setbacks, Verification and Notification – Expanding Operations

Total Animal Units	For Expanding Operations Non-Farm Residences within Distance	Property Line Setback[1]	MDA Site Review and Verification Process	~~Local Unit of Government Notification[2]~~
50-249	8- 20 within 1/4 mile	125 ft	Upon Producer Request[~~3~~ 2]	~~Yes~~
250-499	8- 20 within 1/4 mile	200ft	Yes	~~Yes~~
500-749	8- 20 within 1/4 mile	200 ft	Yes	~~Yes~~
750-999	8- 20 within 1/2 mile	250 ft	Yes	~~Yes~~
1000 or more	8- 20 within 1/2 mile	300 ft	Yes	~~Yes~~

[1] May be ~~modified upon written request based upon the Minnesota Odor Estimator Model, utilizing the 95% odor annoyance free requirement, proximity to existing non-farm residences, adjacent land use and management technologies implemented at the livestock production facility.~~ reduced based upon the Odor Management Plan.
[2] ~~See Section V: Notification of Local Unit of Government.~~
[~~3~~] To be afforded nuisance protection under the Right to Farm Act, producers must conform to all applicable GAAMPs but are not required to complete the site review and verification process if less than 250 animal units.

Category 3 Sites: Sites not appropriate for new and expanding livestock production facilities.

New and expanding livestock production facilities should not be constructed in areas where local zoning does not allow for agriculture uses. Any proposed site with more than the maximum number of non-farm residences specified in Table 4 for a new operation and Table 5 for an expanding operation is a Category 3 site. New and expanding livestock production facilities are inappropriate for that site. Additionally, the following categories are considered unacceptable for construction of new and expanding livestock production facilities.

1. Wetlands - New and expanding livestock production facilities shall not be constructed within a wetland as defined under MCL 324.30301 (NREPA, PA 451, as amended).

2. Floodplain - New and expanding livestock production facilities and manure storage facilities shall not be constructed in an area where the facilities would be inundated with surface water in a 25 year flood event.

The following categories are also considered unacceptable for construction of new livestock production facilities. However, expanding livestock production facilities may be acceptable

if appropriate odor reduction and control technologies and management practices are used and site verification approval is determined by MDA. In addition, review and approval of expansion in these areas is required by the appropriate agency, as indicated.

1. Drinking Water Sources
   Groundwater protection - New livestock production facilities shall not be constructed within a 10 year time-of-travel zone designated as a wellhead protection area as recognized by the Michigan Department of Environmental Quality (MDEQ), pursuant to programs established under the Michigan Safe Drinking Water Act, P.A. 399 of 1976. An expanding livestock production facility may be constructed with review and approval by the local unit of government administering the Wellhead Protection Program.

   Where no designated wellhead protection area has been established, construction of new and expanding livestock production facilities shall not be closer than 2000 feet to a Type I or Type IIa public water supply and shall not be closer than 800 feet to a Type IIb or Type III public water supply. An expanding livestock facility may be located closer than these distances, upon obtaining a deviation from well isolation distance through MDEQ or the local health department. New and expanding livestock production facilities should not be constructed within 75 feet of any known existing private domestic water supply (wellhead).

   Surface water protection - New and expanding livestock production facilities shall not be constructed within the 100 year flood plain of a stream reach where a community surface water source is located, unless the livestock production facility is located downstream of the surface water intake.

2. High Public Use Areas - Areas of high public use or where a high population density exists are subject to setbacks to minimize the potential effects of a livestock production facility on the people that use these areas. New livestock production facilities should not be constructed within 1500 feet of hospitals, churches, licensed commercial elder care facilities, licensed commercial childcare facilities, school buildings, commercial zones, parks or campgrounds. Existing livestock production facilities may be expanded within 1500 feet of high public use areas with appropriate MDA review and verification. The review process will include input from the local unit of government and from people who utilize those high public use areas within the 1500-foot setback.

3. Residential Zones - Areas that are zoned primarily for residential use will generally have housing at a density that necessitates setback distances for livestock production facilities to prevent conflicts. New livestock production facilities shall not be constructed within 1500 feet of areas zoned for residential use where agriculture uses are excluded. Existing livestock production facilities may be expanded within 1500 feet of areas zoned for residential use with approval from the local unit of government.

SECTION IV. - DEVELOPING A SITE PLAN AND A MANURE MANAGEMENT SYSTEM PLAN

Site Plan

A Site Plan is a comprehensive layout for a livestock production facility, and includes:

- A site map including the following features (to scale):
  - ~ Property lines, easements, rights-of-way, and any deed restrictions.
  - ~ Public utilities, overhead power lines, cable, pipelines, and legally established public drains.
  - ~ Positions of buildings, wells, septic systems, culverts, drains and waterways, walls, fences, roads, and other paved areas.
  - ~ Location, type and size of existing utilities.
  - ~ Location of wetlands, streams and other bodies of water.
- Existing land uses for contiguous land.
- Names and addresses of adjacent property owners.
- Basis of livestock production facility design.
- Size and location of structures.
- A soils map of the area where all livestock production facilities are located.
- Location and distance to the non-farm residences within one-half mile.
- Location and distance to the nearest residentially zoned area.
- Topographic map of site and surrounding area.
- Property deed restrictions.

Manure Management System Plan

The Manure Management System Plan describes the system of structural, vegetative and management practices that the owner/operator has chosen to implement on the site for all proposed new and existing facilities. Items to address in the manure management system plan are described in the GAAMPs for Manure Management and Utilization. The manure management system plan for a site verification request will include these additional components:

- ~~Sufficient land, or have access to sufficient land for the proper collection, storage, treatment, transfer, utilization, and treatment if applicable, of the manure and other by-products generated~~.
- ~~Provisions for the collection and utilization of polluted runoff and leachate from manure and feed.~~
- Planning and installation of manure management system components to ensure proper function of the entire system.

- Operation and Maintenance Plan: This written plan identifies the major structural components of the manure management system, and includes inspection frequency, areas to address, and regular maintenance records.
- Odor Control: Odor control is a primary focus relating to the social consideration objectives of these GAAMPs. For new and expanding livestock production facilities, an Odor Management Plan may be required (refer to Category 1 and Category 2 to determine whether an OMP is required for your facility) as part of the Manure Management System Plan for conformance with these GAAMPs. Appendix A includes a detailed outline for development of an effective OMP.
- Manure Storage Facility Plan: Construction plans detailing the design of manure storage components must be submitted to MDA prior to the start of construction. Structures should be designed in accordance with appropriate design standards. Construction plans should include the design standards utilized, design storage volume, size and layout of the structure, materials specifications, soil conditions in the structure area, site suitability, subsurface investigation, elevations, installation requirements, and appropriate safety features. The plans will be reviewed for conformance with appropriate specifications. Structures should be designed and constructed by competent individuals or companies utilizing generally accepted standards, guidelines and specifications. (e.g. NRCS, Midwest Plan Service)
- Other items that may accompany the Manure Management System Plan include the following:

  ~Emergency Action Plan -Through development of an Emergency Action Plan, identify the actions to take and contacts to be made in the event of a spill or discharge.

  ~Veterinary Waste Management Plan - identify the processes and procedures used to safely dispose of livestock-related veterinary wastes produced on the farm.

  ~Conservation Plan - field-specific plan describing the structural, vegetative and management measures for the fields where manure and other by-products will be applied.

  ~Mortality Management Plan - identify the processes and procedures used to safely dispose of the bodies of dead animals (Bodies of Dead Animals Act P.A.-239 of 1994).

~~Minnesota Odor Estimator Model~~

~~The Minnesota Odor Estimator Model is available as a component of the planning process. For new sites, this will aid in identifying non-farm residences that may be impacted by the site and whether the location or technology proposed for the new facility will minimize the impact on non-farm residences. For sites of expanding livestock production the model will aid in the planning to identify additional non-farm residences that may be affected by the~~

~~expanding operation and whether the location or technology can minimize the impact on additional residences~~.

~~The use of the Minnesota Odor Estimator Model will alert the producer to potential conflicts while still in the planning process. The Minnesota Odor Estimator Model is available from MSU Extension, consultants, and MDA's Website (http://www.michigan.gov/mda). MDA may require documentation to confirm the results of the Minnesota Odor Estimator Model which are submitted with a siting verification request. Manure storage structures built within the prior three (3) years of a site verification request are considered part of a new or expanding verification request.~~

~~Manure Storage Facility Plan~~

~~Construction plans detailing the design of manure storage components must be submitted to MDA prior to the start of construction. Structures should be designed in accordance with appropriate design standards. Construction plans should include the design standards utilized, design storage volume, size and layout of the structure, materials specifications, soil conditions in the structure area, site suitability, subsurface investigation, elevations, installation requirements, and appropriate safety features. The plans will be reviewed for conformance with appropriate specifications.~~

~~MDA will conduct construction site inspections, as needed to determine whether the structures are being built according to the accepted plans. The owner should notify MDA one month prior to beginning the installation of the manure storage facility.~~

Comprehensive Nutrient Management Plan

A Comprehensive Nutrient Management Plan (CNMP) is the next step beyond a Manure Management System Plan (MMSP). All efforts put towards an MMSP may be utilized in the development of a CNMP as it is founded on the same eight components as the MMSP, with a few significant differences. Some of the "optional" sub-components of an MMSP are required in a CNMP. Examples include veterinary waste disposal and mortality management. In addition, the "production" component is more detailed regarding management of rainwater, plate cooler water, and milk house wastewater. More thorough calculations are also needed to document animal manure production.

Another difference between an MMSP and a CNMP is in the "Utilization" component. With an MMSP, nutrients need to be applied at agronomic rates and according to realistic yield goals. However, with a CNMP, a more extensive analysis of field application is conducted. This analysis includes the use of the Manure Application Risk Index (MARI) to determine suitability for winter spreading, and the Revised Universal Soil Loss Equation (RUSLE) to determine potential nutrient loss from erosive forces, and other farm specific conservation practices. More detail regarding the timing and method of manure applications and long term cropping system/plans must be documented in a CNMP.

Additional information on potential adverse impacts to surface and groundwater and preventative measures to protect these resources are identified in a CNMP. Although the

CNMP provides the framework for consistent documentation of a number of practices, the CNMP is a planning tool not a documentation package.

Odor management is included in both the MMSP and CNMP.

Implementation of an MMSP is ongoing. A CNMP implementation schedule typically includes long-term changes. These often include installation of new structures and/or changes in farm management practices that are usually phased in over a longer period of time. Such changes are outlined in the CNMP implementation schedule, providing a reference to the producer for planning to implement changes within their own constraints. As is described above, a producer with a sound MMSP is well on their way to developing a CNMP. Time spent developing and using a MMSP will help position the producer to ultimately develop a CNMP on their farm, if they decide to proceed to that level or when they are required to do so.

WHO ~~NEEDS~~ IS REQUIRED TO DEVELOP A CNMP?

1. All farms with 1000 animal units (AU) or more must develop a CNMP.
2. Any farm with less than 1000 AU that has had a Department of Environmental Quality (DEQ) documented discharge to surface water may be required to develop a CNMP.
3. Any 1000 AU (or more) farm that has not had a documented discharge since January 2000 has a choice:
    a. Apply for coverage with the DEQ's National Pollutant Discharge Elimination System (NPDES) general permit, or
    b. Develop a CNMP through participation in the Michigan Agriculture Environmental Assurance Program (MAEAP).
4. All farms with 1000 AU or more that have had a discharge, and newly constructed facilities with over 1000 AU that were populated after February 27, 2004, must apply for NPDES permit coverage.

For additional information regarding MAEAP go to: www.maeap.org or call 517-241-4063.
For additional information regarding the permit go to: www.michigan.gov/deq.

SECTION V. - SITE REVIEW AND VERIFICATION PROCESS

Siting Request Process:
The GAAMPs for site selection and odor control for new and expanding livestock production facilities are applicable for producers with new and expanding livestock production facilities with a capacity of 50 animal units or greater (see Table 1), who are seeking nuisance protection under the Right to Farm Act. Producers with facilities that require MDA verification in categories 1, 2, or 3 should contact the MDA and begin the site selection review and verification process prior to the construction of new livestock production facilities and expansion of existing livestock production facilities.

To begin the review and verification process, contact can be made with the Michigan Department of Agriculture Right to Farm Program by calling 877-632-1783. This number is toll free and is operational during normal business hours.

~~Development of Plans~~ Application for Siting Verification:
A request to begin the site review and verification process can be made by submitting a letter from the responsible party to the MDA Right to Farm Program. This letter should outline the proposed new construction or expansion project, any areas of concern, agencies and individuals the producer is already working with, and the proposed timeline. The responsible party must also submit a complete site verification request. A request application and a checklist are available at www.michigan.gov/mda, click "Farming", and then click "Environment". The checklist will assist you in identifying environmental or social areas of concern. If special technologies or management practices are to be implemented for the successful operation of the livestock production facility, these must be included in the siting request package.

Producers may also utilize recognized industry, university, and agency professionals in the development of their siting request, site plan and manure management system plan.

Siting Request Review:
Upon receipt of the siting request package, MDA will send an acknowledgement letter to the producer. This acknowledgement letter will also be sent to the local unit of government to inform them of the proposed livestock production facility siting request.

MDA will review the completed siting requests upon receipt. The review will determine whether the siting request information submitted conforms to these GAAMPs.
~~MDA Preliminary Site Visit:~~ MDA will conduct preliminary site visits to proposed new and expanding livestock production facilities. This site visit will take place upon receipt of the complete siting request package and will focus on addressing conformance with the plan components, identifying areas of concern, and verifying information submitted in the siting request. If deficiencies in the siting request are identified, MDA will communicate those to the responsible party for further modification. ~~Upon receipt of the siting request package, MDA will notify the local unit of government in writing of that proposed livestock production facility siting request~~. At the request of the producer, a preliminary site visit could be conducted prior to submission of the complete siting request package.

~~Review and Verification:~~
~~MDA will review completed siting requests upon receipt. The review will verify the following: siting request information submitted; conformance with this GAAMP; a complete Site Plan and Manure Management System Plan, including the assessment of odor potential and a plan to minimize excessive odors; project timetable; local unit of government input; and recognized industry, university, or agency professional involvement. If deficiencies in the siting request are identified, MDA will communicate those to the responsible party for further modification~~.

Site Suitability Determination:
MDA will determine if the siting request is in conformance with the GAAMPs for Site Selection and Odor Control for New and Expanding Livestock Production Facilities. This determination will be conveyed to the responsible party on MDA letterhead and will remain valid for five years. This determination will be known as "Site Suitability Approval." This approval will also

be copied to the local unit of government. Construction must begin within five years from the date of approval by MDA. The start of construction is defined as the physical movement of soil or installation of permanent structures.

Construction Plan Submittal and Review:
Prior to construction, engineering design plans for the manure storage structures must be submitted to MDA for review. If the plans are found to be in accordance with the required specifications, a letter indicating "Approval to Start Construction" will be sent to the owner. MDA will conduct construction site inspections as needed to determine whether the structures are being built according to the accepted plans. The owner should notify MDA one month prior to beginning the installation of the manure storage facility.

Final Inspection:
MDA will conduct a final inspection prior to animal population, when possible. The completed project must be reviewed by MDA to assure conformance with these GAAMPs. The facility must be completed in conformance with the verification request that has been approved by MDA. Once the facility has been constructed and found in conformance with these GAAMPs a final verification letter will be sent to the producer. This letter will be copied to the local unit of government.

~~Determination of Conformance with this GAAMP:~~
~~MDA will determine if the siting request is in conformance with the GAAMP for Site Selection and Odor Control for New and Expanding Livestock Production Facilities. This determination will be conveyed to the responsible party on MDA letterhead and will remain valid for three years. If the siting request is found not to be in conformance with this GAAMP, MDA will provide justification for that decision to the responsible party. MDA will conduct construction site inspections, as needed, to determine whether the structures are being built according to the accepted plans. The completed project must be reviewed by MDA to assure conformance with this GAAMP. The facility must be completed in conformance with the verification request that has been approved by MDA.~~

~~Notification to Local Unit of Government:~~
~~MDA will notify the local units of government within one mile of the center of the facility of all proposed livestock production facility siting requests and of all determinations made regarding the status of a siting request for siting a new or expanding livestock production facility.~~

Review Process:
If either the owner of the proposed livestock production facility, or any surrounding neighbor within one mile of the proposed facility, or the local unit of government disagrees with the results of the review and verification process, they may request MDA's decision be reviewed by the Michigan Commission of Agriculture within 60 days of the date the decision was issued. The request shall be in writing and include supporting documentation. MDA will review the supporting documentation and then will consult with at least three recognized professionals in the siting and management of livestock production facilities and odor control practices as listed below to further evaluate the proposed siting request. MDA will notify the professionals of the request. The professionals shall review and report a recommendation on the proposed siting request to the Commission of Agriculture within 60 days of receipt of the notification form to MDA. An extension may be granted by the Commission of Agriculture. The final decision rests

with the Michigan Commission of Agriculture. This review process is created solely for the purpose of this specific GAAMP, and the Administrative Procedures Act does not apply.

Recognized Professionals:
Recognized professionals in the siting and management of livestock production and odor control practices may include, but are not limited to personnel from the following:

a. Conservation Districts

b. Industry Representatives

c. Michigan Department of Environmental Quality

d. Professional Consultants and Contractors

e. Professional Engineers

f. United States Department of Agriculture - Natural Resources Conservation Service

g. University Agricultural Engineers and other University Specialists

The site review and verification process will be conducted in accordance with MDA procedures and protocol.

APPENDIX A

MICHIGAN ODOR MANAGEMENT PLAN

The goal of an effective Odor Management Plan is to identify opportunities and propose practices and actions to reduce the frequency, intensity, duration and offensiveness of odors, that neighbors may experience, in such a way that tends to minimize impact on neighbors and create a positive attitude toward the farm. Because of the subjective nature of human responses to certain odors, recommending appropriate technology and management practices is not an exact science.

An Odor Management Plan shall include these six basic components:

1. Identification of potential sources of significant odors.
2. Evaluation of the potential magnitude of each odor source.
3. Application and evaluation of Michigan Odor from Feedlot Setback Estimation Tool (OFFSET).
4. Identification of current, planned, and potential odor control practices.
5. A plan to monitor odor impacts and respond to odor complaints.
6. A strategy to develop and maintain good neighbor and community relations.

Note that items 1, 2, and 4 of the Odor Management Plan components may be addressed in tabular format as demonstrated in the example Odor Management Plan (Appendix B).

Component Details:

1. Identify and describe all potential significant sources of odor associated with the farm. Odor sources may include:
   - Animal housing
   - Manure and wastewater storage and treatment facilities
   - Feed storage and management
   - Manure transfer and agitation
   - Land application areas

2. Evaluate the magnitude of each odor source in relation to potential impact on neighbors and other community members.

Odor magnitude is a factor of both the type and size of the source.

Michigan OFFSET is one means of estimating odor source magnitudes and potential impacts from animal production facilities. Use the Michigan OFFSET odor emission values to rank each potential odor source on your farm. Note that some odor sources are not considered in this tool.

For odor sources not addressed by Michigan OFFSET, a subjective potential odor magnitude evaluation of high, medium, or low, relative to other odor sources on the farm should be conducted.

3. Analyze potential odor impact on neighboring residences and other non-farm areas with Michigan OFFSET, utilizing the 95% odor annoyance free level, and evaluate the conclusions as follows:
    - Identify specific odor impact on neighboring residences, utilizing OFFSET results and other site-specific odor impact considerations.
    - Assess the magnitude of potential odor-based conflict.
    - Develop an appropriate conflict abatement strategy for each odor sensitive area of concern which may include:
        i. Signed letter from property owner consenting to approval of the new or expanded facility.
        ii. Description of intensified community relations practices for these homes or other odor sensitive areas.
        iii. Explanation of specific variables in Michigan OFFSET that may reduce the concern, such as, variables in terrain, wind velocity, facility layout, variation of facility from typical, and odor management practices not credited in Michigan OFFSET.
4. Identify management systems and practices for odor control including:
    - Practices currently being implemented.
    - New practices that are planned for implementation.
    - Practices that will be considered, if odor concerns arise.

There are numerous odor reduction practices available; however, not all have been proven equally effective. Some practices may reduce odor from one part of the system, but increase it in another. For example, long-term manure storage will reduce the frequency of agitation of the storage thus producing less frequent odor events, but will likely result in greater intensity and offensiveness of each odor event.

Each farm situation is unique and requires site-specific identification and implementation of odor reduction practices to suit the practical and economic limitations of a specific farm.

Simple changes in management, such as, but not limited to, improving farmstead drainage, collecting spilled feed, and regular fan maintenance will reduce overall farmstead odor.

“Practices that will be considered, if odor concerns increase” should include only those odor management practices that the producer would seriously consider implementing, if the need arose.

Improved management, as well as the adoption of new technologies to control odor offer a means for reducing odor from livestock production facilities and manure storage facilities, thus broadening the potential area within which livestock production facilities may be appropriately sited. Odor reduction technologies continue to evolve. Current

technologies include, but are not limited to, vent bio-filters, manure storage covers, and composting.

Each technology presents different challenges and opportunities. These should be considered during the planning process for a new or expanding animal livestock facility.

5. Describe the plan to track odor impact and the response to odor concerns as they arise.
    - Outline how significant odor events will be recognized and tracked including potential impact on neighbors and others. For example, one could record odor events noticed by those working on and/or cooperating with the farm. If odor is noticeable to you, your family, or employees, then it is likely noticeable to others.
    - Explain how odor complaint will be addressed.
    - Indicate the point at which additional odor control measures will be pursued.

6. Identify the strategy to be implemented to establish and maintain a working relationship with neighbors and community members.

Elements of a community relations plan may include:

- Conducting farming practices that result in peak odor generation at times that will be least problematic for neighbors.
- Notifying neighbors of when there will be an increase in odors.
- Hosting an annual neighborhood farm tour to provide information about your farm operation.
- Sending a regular farm newsletter to potentially affected community members.
- Keeping the farmstead esthetically pleasing.
- Supporting community events and causes.

SECTION VI. REFERENCES

The Generally Accepted Agricultural and Management Practices for Manure Management and Utilization.

Jacobsen, Larry and Huiqing Guo. An Odor Setback Estimator for Feedlots (OSEFF). BAE Department. University of Minnesota. (Minnesota Odor Estimator Model)

Jacobson, Larry, Huiqing Guo, David Schmidt, Richard Nicolai, Jun Zhu and Kevin Janni. Worksheet for the Odor Rating System to Estimate Setback Distances for Animal Production Sites. Version 1.0. BAE Department. University of Minnesota. (Minnesota Odor Estimator Model)

The Michigan Natural Resources and Environmental Protection Act (PA 451 of 1994).

Michigan Right to Farm Act, PA 93 of 1981, as amended.

National Pork Producers Council On-Farm Odor Assessment Program.

United States Department of Agriculture, Natural Resources Conservation Service, Field Office Technical Guide, East Lansing, MI.

United States Department of Agriculture, Natural Resources Conservation Service, Agricultural Waste Management Field Handbook, Washington DC, 1992.

United States Federal Clean Water Act [Code of Federal Regulations 40 (CFR40)]

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